

In the Abstract:

ABSTRACT OF THE DISCLOSURE

ZERO KNOWLEDGE PROOF CRYPTOGRAPHIC METHODS AND DEVICES

The invention relates to a A cryptography method involving a keyholder having a number  $m \geq 1$  of private keys  $Q_1, Q_2, \dots, Q_m$  and respective public keys  $G_1, G_2, \dots, G_m$ , each pair of keys  $(Q_i, G_i)$  (where  $i = 1, \dots, m$ ) satisfying either the relationship  $G_i = Q_i^v \pmod{n}$  or the relationship  $G_i \times Q_i^v = 1 \pmod{n}$ , where  $n$  is a public integer equal to the product of  $f$  (where  $f > 1$ ) private prime factors  $p_1, \dots, p_f$ , at least two of which are separate, and the exponent  $v$  is a public integer equal to a power of 2. ~~The invention teaches among other things~~ Disclosed is what mathematical structure may be imparted to the public keys for it to be impossible to calculate said private keys from said public parameters in a reasonable time unless said prime factors are known. ~~The invention also relates to devices~~ Devices adapted to implement the method are also disclosed.